AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-20. (canceled).

21. (currently amended): A method of etching a chromium-based thin film, the thin film comprising chromium, by use of a resist pattern placed thereon as a mask,

comprising:

setting a plasma excitation power to a value lower than a power value at which electron density jump is caused to occur,

supplying ~~a~~ plasma excitation power at said set power value to a dry etching gas to excite plasma so that a chemical species is generated, said dry etching gas comprising Cl_2 and O_2, and

carrying out the etching of the thin film by use of the chemical species,

~~wherein the plasma excitation power is lower than a plasma excitation power at which a plasma density jump occurs~~ so that verticalness of the sectional shape of the pattern formed in the thin film is enhanced.

22. (previously presented). The method of etching a chromium-based thin film according to claim 21, wherein at least a part of the chemical species is supplied in the direction perpendicular to the thin film so that the resist layer which forms the resist pattern is etched to generate an organic substance, and

an etching selectivity S between a resist layer and the thin film is smaller than 1.5, whereby S is defined as:

S= (etching rate of the thin film/etching rate of the resist layer) .

23. (previously presented). The method of etching a chromium-based thin film according to claim 22, wherein at least a part of the chemical species is supplied in the direction perpendicular to the thin film by applying a high-frequency power.

24. (previously presented). The method of etching a chromium-based thin film according to claim 23, wherein the resist layer which forms the resist pattern has a coverage of 70% or more of the thin film.

25. (previously presented). The method of etching a chromium-based thin film according to claim 24, wherein the high-frequency power is applied so that an organic substance be deposited on a side wall of the resist pattern and to be etched by an isotropic etching component generated during the etching.

26. (Canceled).

27. (previously presented). The method of etching a chromium-based thin film according to claim 25, wherein the dry etching gas further contains helium.

28. (previously presented): The method of etching a chromium-based thin film according to claim 27, wherein the thin film is etched in presence of an organic substance other than the resist layer and a derivative thereof.

29. (previously presented): The method of etching a chromium-based thin film according to claim 28, wherein the organic substance comprises an organic gas which is introduced to the dry etching gas.

30. (previously presented): The method of etching a chromium-based thin film according to claim 28, wherein an organic substance comprises an organic polymer which is disposed in an etching chamber where etching is carried out.

31. (currently amended): A method of etching a chromium-based thin film by processing an object comprising the chromium-based thin film containing chromium, by use of a resist pattern placed thereon as a mask, comprising:

setting a plasma excitation power to a value lower than a power value at which electron density jump is caused to occur,

supplying a plasma excitation power at said set power value to a dry etching gas to excite plasma so that a chemical species is generated, said dry etching gas comprising Cl_2 and O_2 and

carrying out the etching of the thin film by use of the chemical species, so that

~~wherein:~~

the thin film is etched in presence of an organic substance other than a resist layer which forms the resist pattern and a derivative of the resist pattern, and

~~so that~~ an organic product ~~be~~ is deposited on a side wall of the resist layer during the etching.

32. (previously presented). The method of etching a chromium-based thin film according to claim 31, wherein a resist layer which forms the resist pattern has a coverage smaller than 70% of the thin film.

33. (previously presented). The method of etching a chromium-based thin film according to claim 32, wherein the organic substance comprises an organic gas which is introduced to the dry etching gas.

34. (previously presented). The method of etching a chromium-based thin film according to claim 33, wherein the amount of the organic gas is 30 vol% or less of the dry etching gas.

35. (previously presented). The method of etching a chromium-based thin film according to claim 34, wherein the organic gas comprises ethanol.

36. (previously presented). The method of etching a chromium-based thin film according to claim 32, wherein the organic substance comprises an organic polymer which is disposed in an etching chamber where etching is carried out.

37. (Canceled).

38. (previously presented). The method of etching a chromium-based thin film according to claim 36, wherein the dry etching gas further contains helium.

39. (currently amended): A method of manufacturing a photo mask from a photo mask blank comprising a transparent substrate and a light-shielding thin film formed on the transparent substrate, said thin film comprising chromium, said method comprising etching the thin film by use of a resist pattern placed thereon as a mask,

said etching comprising:

setting a plasma excitation power to a value lower than a power value at which electron density jump is caused to occur,

supplying a plasma excitation power at said set power value to a dry etching gas to excite plasma so that a chemical species is generated, said dry etching gas comprising a Cl_2 and O_2, and carrying out the etching of the thin film by use of the chemical species,

~~wherein the plasma excitation power is lower than a plasma excitation power at which a plasma density jump occurs, and~~ such that at least a part of the chemical species is supplied toward the thin film in a direction perpendicular to the thin film.

40. (previously presented). The method of manufacturing a photo mask according to claim 39, wherein at least a part of the chemical species is supplied in the direction perpendicular to the thin film so that the resist layer which forms the resist pattern is etched to generate an organic substance, and an etching selectivity S between a resist layer and the thin film is smaller than 1.5, whereby S is defined as: S = (etching rate of the thin film/etching rate of the resist layer).

41. (previously presented): The method of manufacturing a photo mask according to claim 40, wherein, by etching the thin film, a pattern including an optical proximity correction (OPC) pattern is formed.

42. (previously presented): The method of manufacturing a photo mask according to claim 39, wherein, by etching the thin film, a pattern including a pattern of which a design size is between 0.4μm or more and 2.0μm and of which a CD linearity error is 15nm or less is formed.

43. (currently amended): A method of manufacturing a photo mask from a photo mask blank comprising a transparent substrate and a light-shielding thin film formed on the transparent substrate, said thin film comprising chromium,

said method comprising etching the thin film by use of a resist pattern placed thereon as a mask,

said etching comprising:

setting a plasma excitation power to a value lower than a power value at which electron density jump is caused to occur,

supplying a plasma excitation power at said set power value to a dry etching gas to excite plasma so that a chemical species is generated, said dry etching gas comprising $C1_2$ and O_2, and

carrying out the etching of the thin film by use of the chemical species, ~~wherein~~ so that the thin film is etched in presence of an organic substance other than a resist layer which forms the resist pattern and a derivative of the resist pattern, ~~so that~~ and an organic product ~~be~~ is deposited on a side wall of the resist layer during the etching.

44. (previously presented). The method of Claim 23 wherein a high-frequency power is applied to the chemical species, said plasma excitation power being at least 10 times of the high-frequency power.

45. (previously presented). The method of Claim 39 wherein a high-frequency power is applied to the chemical species, said plasma excitation power being at least 10 times of the high-frequency power.

46. (new): A method of etching a chromium-based thin film with an etching apparatus having a chamber, the thin film comprising chromium, by use of a resist pattern placed thereon as a mask, comprising:

setting a plasma excitation power to a value lower than a power at which electron density jump is caused to occur in said chamber,

supplying ~~a~~ plasma excitation power at said set value to a dry etching gas in said chamber to excite plasma in said chamber so that a chemical species is generated, said dry etching gas comprising Cl_2 and O_2, and

carrying out the etching of the thin film in said chamber by use of the chemical species, so that verticalness of the sectional shape of the pattern formed in the thin film is enhanced.

47. (new): The method of claim 46, the generated chemical species in said chamber has suppressed radicals in said plasma so that isotropic etching is avoided.